

REMARKS

Claims 1-5, 7-13, 15-23 and 26-30 are all the claims pending in the application.

Undersigned counsel thanks the Examiner, Mr. Chou, for courteously granting the telephone interview of September 23, 2011. The Office communication of October 11, 2011, attaches an Interview Summary of that interview. The Interview Summary accurately reflects the substance of the interview, and is hereby adopted as applicant's Statement of Substance of Interview. Applicants in the following discussion will also refer to arguments presented during the interview.

Claim 7 has been objected to as being dependent on a canceled claim. In response, applicants have amended claim 7 so that it depends from claim 1. In view of the above, applicants request withdrawal of this objection.

Claims 1-5, 7-9, 11-13, 15-23, and 26-30 have been rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sudo et al (WO 03/028128).

Applicants submit that Sudo et al do not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

The rejection based on Sudo et al is substantially identical to the Examiner's previous rejection based on Sudo et al.

Applicants have previously argued that in Sudo et al, the carbon material has a structure which becomes different on the surface and at the core of the particle because the surface of the particle has an amorphous-rich structure, the core has a graphite-rich structure and the particle as a whole has a non-uniform structure. Applicants argued that Sudo et al provide a non-uniform structure, whereas the present invention provides a substantially uniform structure.

Applicants previously presented a number of reasons why Sudo et al provide a non-uniform structure. These reasons were based on the different methods used to form the carbon material of Sudo et al and the carbon material of the present invention.

At the interview, applicants did not rely on the previous arguments as to why Sudo et al provide a non-uniform structure. Instead, applicants relied on specific descriptions in Sudo et al where Sudo et al describe the structure of their carbon material.

In particular, undersigned counsel directed the Examiner's attention to Figure 2 of Sudo et al which shows that the carbon material has an inner graphite core particle and a surface layer 4 made of a "carbonaceous material."

Undersigned counsel further directed the Examiner's attention to the disclosure at page 17, line 20 to page 18, line 1 of Sudo et al where Sudo et specifically describe the carbonaceous material as being a material which comprises heterogeneous carbonaceous particles having properties different from those of the carbon particles serving as a matrix. Sudo et al state that the term "heterogeneous carbonaceous" refers to a carbonaceous material having physical properties, e.g., air permeability, penetrability, strength, adhesion, density, crystallinity, and specific surface area, different from those of carbonaceous powder serving as a matrix. Sudo et al further state this means that there exists no carbonaceous material as a continuous layer that exhibits the same physical properties as those of the matrix.

In view of these specific disclosures in Sudo et al, applicants submit that Sudo et al clearly teach that their carbon material does not have a substantially uniform structure from the surface to the center portion of the particle surface layer, but has a non-uniform structure.

Applicants submit that these disclosures of Sudo et al are contrary to the conclusions that the Examiner had set forth relating to his belief of what structure would result from the method disclosed in Sudo et al.

Since the present claims are product claims, the recitations of the present claims that set forth the product characteristics must be compared to the product characteristics that Sudo et al describe for their product, and that such a comparison shows that Sudo et al do not disclose or suggest the presently claimed invention.

As noted above, applicants have argued in previous responses that in Sudo et al, the surface of the particle has an amorphous-rich structure.

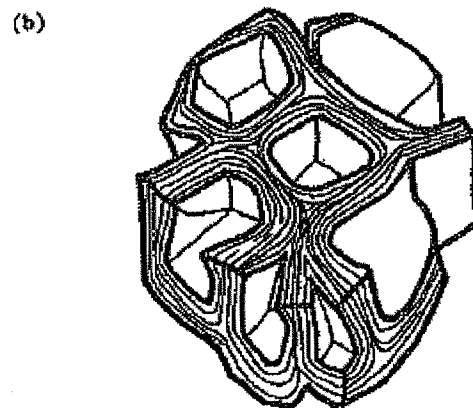
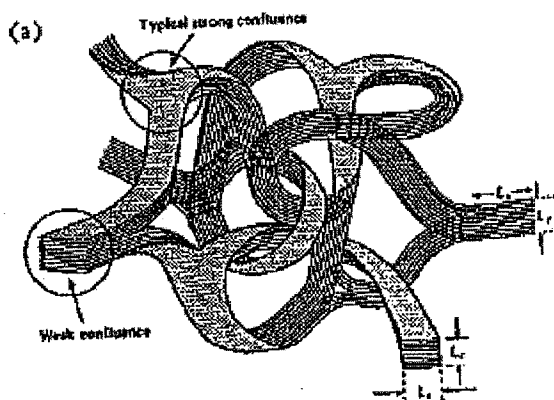
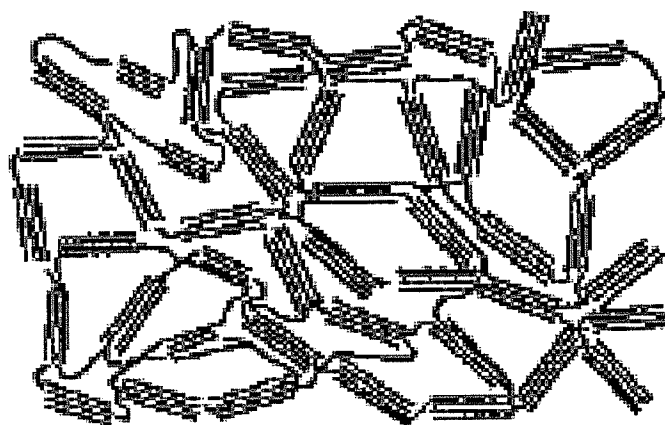
As a result of further study, applicants note that Sudo et al contain a number of passages that indicate that the surface layer can contain graphite. For example, applicants refer the Examiner to page 20, line 27 to page 21, line 1, page 27, line 6 to 17, page 29, lines 10 to 16, and page 30, lines 14 to 25. In addition, applicants refer the Examiner to Example 4 which indicates that the coating carbon had a d002 of 0.3355 nm.

However, since Sudo et al specifically state that carbonaceous material of the surface layer has physical properties different from those of carbonaceous powder serving as a matrix, applicants submit that Sudo et al clearly teach that their carbon material does not have a substantially uniform structure from the surface to the center portion of the particle surface layer, but has a non-uniform structure.

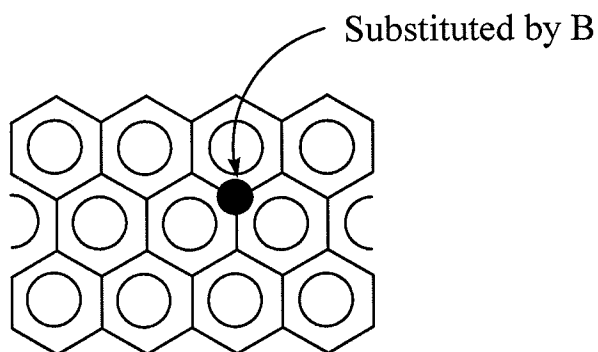
With respect to Example 4, Sudo et al illustrate a case where a boron compound is added at the time of graphitization, which leads to the progress of crystallization on the surface of the particle. As a result, the surface of the particle in Example 4 of Sudo et al may not have an

amorphous-rich structure. However, the surface and the core of the particle have a different structure and the particle as a whole has a non-uniform structure in Sudo et al.

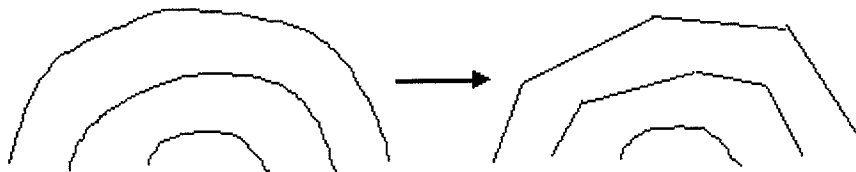
In particular, Sudo et al provide a particle having hard carbon (carbon which is difficult to be graphitized) as shown below deposited on the surface thereof.



Meanwhile, the effect of the boron compound to be added at the time of graphitization is to substitute a boron atom with a carbon atom so as to promote graphitization.



Upon the substitution of boron, cleavage of graphite crystals occurs and then a planar graphite network grows.



However, when boron is added to the carbon in which crystallization is already developed, it effects only on the surface of the carbon material since boron has difficulty in permeating into the carbon particles, and boron does not reach the core of the particle.

Furthermore, boron does not have the capability to make the above-mentioned hard carbon to have an orderly structure like natural graphite.

For these reasons, although the boron addition increases the crystallinity in terms of d_{002} , it is not very effective in expanding crystallization in horizontal and vertical directions. Therefore, it is substantially difficult to provide a uniform structure in the surface and the core of the particle only by adding boron as taught by Sudo et al.

In summary, since Sudo et al specifically state that carbonaceous material of the surface layer has physical properties different from those of carbonaceous powder serving as a matrix, applicants submit that Sudo et al clearly teach that their carbon material does not have a

substantially uniform structure from the surface to the center portion of the particle surface layer, but has a non-uniform structure.

In view of the above, applicants submit that Sudo et al do not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

Claim 10 has been rejected under 35 U.S.C. § 103(a) as obvious over Sudo et al in view of JP 10-116605 to Yamada.

Since claim 10 depends from claim 1, applicants submit that it is patentable over Sudo et al for the same reasons as discussed above in connection with the rejection of claim 1 over Sudo et al. Yamada does not supply the above discussed deficiencies of Sudo et al.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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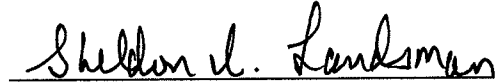
WASHINGTON OFFICE

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CUSTOMER NUMBER

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Respectfully submitted,



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